

### **REMARKS**

Claim 1 has been amended. Support for the amendment is found in the Specification, for example, at page 3, lines 23-25; and page 4, lines 24 to page 5, line 3; and original claim 1. See *In re Gardner*, 177 USPQ 396, 397 (CCPA 1973); and MPEP §§ 608.01(o) and (l).

Claim 13 is amended to place the claim in proper format.

Claims 4, 10 and 14 have been cancelled, without prejudice.

Claims 16- 22 have been added.

Support for claim 16 is found in the Specification, for example, at page 5, lines 4-12 and 21-22; and original claim 1. (Id.) Support for claim 17 is found in the Specification, for example, at page 5, lines 21-29; and original claim 4. (Id.)

Support for claims 18 and 19 is found in the Specification, for example, at page 6, lines 3-5; and original claim 5. (Id.)

Support for claims 20 and 21 is found in the Specification, for example, at page 6, lines 15-27; and page 5, lines 21-29; and original claim 8. (Id.)

Support for claim 22 is found in the Specification, for example, at page 4, lines 22-23.

No new matter has been added. Entry of the amendments is requested. Claims 1, 7, 11-13, and 16-22 are currently under consideration.

***Anticipation Rejection over Jongbloom***

Claim 14 was rejected under 35 U.S.C. § 102(b) as being anticipated by WO 99/30691 to Jongbloom et al. ("Jongbloom"). (Paper No. 20081203 at 3.)

Jongbloom discloses a composition for the controlled release of one or more biologically active substances encapsulated in a degradable biopolymer matrix, consisting of a thermoplastic and/or partly crystalline inulin. (Abstract, lines 1-2.) Jongbloom discloses the optional inclusion of starch to modulate the release rate of the encapsulated biologically active substances. (Page 1, line 29 – Page 2, line 3.) Example 2 of Jongbloom discloses extrusion of inulin with emulsifier, glycerol and orange or apple flavor. Example 3 of Jongbloom discloses kneading of inulin with native potato starch at varied kneading temperatures.

In making the rejection, the Examiner asserted that "Example 2 shows inulin and potato starch extruded with glycerol at the same temperatures." (Id.) The Examiner concluded that "[t]he reference therefore, meets the [claimed] process and the composition." (Id.)

It is noted that the Examiner has erred in that Example 2 of Jongbloom does not disclose extrusion of inulin and glycerol with potato starch. No mention of potato starch is seen in Example 2. For this reason alone, the rejection should be withdrawn.

Although we do not agree with the Examiner's position, to forward prosecution in the present application, claim 14 has been cancelled without prejudice.

It is submitted that the rejection has been rendered moot. Reconsideration and withdrawal of the rejection are requested.

***Anticipation by or, in the Alternative, Obviousness over Goehl***

Claim 14 was rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over EP 011663. (Id.)

Goehl has been summarized previously on the record.

It is noted that the document EP 0111663 to Goehl ("Goehl") had been the basis for rejection in a prior Action. It is believed that the Examiner intended to cite Goehl, and that therefore the Examiner's cited EP document noted above contains a typographical error.

In making the rejection, the Examiner referred to the claims of Goehl, and asserted that "[c]laim 1 ... shows a tubular membrane prepared as in claims 3, 5 and 8, which claims are pertinent to the extent of their disclosure of the mixture claimed herein, i.e. polymer and inulin, capable of being extruded." (Id. at 4.)

Although we do not agree with the Examiner's position, to forward prosecution in the present application, claim 14 has been cancelled without prejudice.

It is submitted that the rejection has been rendered moot. Reconsideration and withdrawal of the rejection are requested.

***Anticipation by, or in the Alternative, Obviousness over Soon-Shiong***

Claim 14 was rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over WO 93/09176 ("Soon-Shiong"). (Id.)

Soon-Shiong has been summarized previously on the record.

In making the rejection, the Examiner refers to claims 1-5 of Soon-Shiong. The Examiner asserted that "[c]laim 1 describes a polysaccharide given as inulin in claim 5, which contains a moiety which will undergo polymerization. Therefore, the material is a combination of inulin and a polymer and is 'thermochemically processable'." (Id.)

Although we do not agree with the Examiner's position, to forward prosecution in the present application, claim 14 has been cancelled without prejudice.

It is submitted that the rejection has been rendered moot. Reconsideration and withdrawal of the rejection are requested.

***Anticipation by, or in the Alternative, Obviousness over Guttag***

Claim 14 was rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Guttag U.S. Patent No. 5,346,929 ("Guttag"). (Id.)

Guttag has been summarized previously on the record.

In making the rejection, the Examiner referred to claims 1 and 11 of Guttag that recite inulin with polymers. The Examiner asserted that "[s]ince inulin is the same, then it is inherently 'thermoplastically processable'." (Id. at 5.)

The Examiner further asserted that "[c]laim 1 [of Guttag] recites a synthetic polymer and a natural polymer, which claim 11 [of Guttag] recites is an inulin; synthetic polymers are described at col. 4, lines 10-16." (Id.) The Examiner concluded that Guttag discloses "two elements, inulin and thermoplastic polymers." (Id.)

Although we do not agree with the Examiner's position, to forward prosecution in the present application, claim 14 has been cancelled without prejudice.

It is submitted that the rejection has been rendered moot. Reconsideration and withdrawal of the rejection are requested.

***Anticipation by, or in the Alternative, Obviousness over Van Havernen***

Claim 14 is rejected under 35 U.S.C. §102(e) as anticipated or, in the alternative, under 35 U.S.C. 103(8) as obvious over Van Havernen et al., U.S. Patent No. 6,313,203 ("Van Havernen"). (Id.)

Van Haveren has been summarized previously on the record.

In making the rejection, the Examiner asserted that "[t]he claims show a mixture of a thermoplastic polymer with inulin. See claim 4. See col. 2, lines 10-11 that describe inulin as being the polyfructose (claim 1), which is a known fact in basic chemistry." (Id.)

As previously indicated on the record, Van Haveren is not a proper reference.

Although we do not agree with the Examiner, to forward prosecution in the present application, claim 14 has been cancelled without prejudice.

It is submitted that the rejection has been rendered moot. Reconsideration and withdrawal of the rejection are requested.

### ***Obviousness Rejection***

Claims 1, 4, 7 and 10-13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Leo U.S. Patent No. 5,419,283 ("Leo") and Wang U.S. Patent No. 5,922,379 ("Wang") in view of Anantharaman et al. U.S. Patent No. 5,952,033 ("Anantharaman") and further in view of Van Haveren et al. U.S. Patent No. 6,313,203 ("Van Haveren") and Bengs et al. U.S. Patent No. 6,406,530 ("Bengs").

We refer the Examiner to the disclosures of Leo, Wang, Anantharaman, Van Haveren, and Bengs, which have been summarized in prior Responses.

In making the rejection, the Examiner asserted that "[b]oth Leo and Wang teach biodegradable thermoplastic products. Leo discloses a chew toy for pets made from a plastic material." (Id. at 6.) The Examiner also asserted that Leo discloses that "thermoplastic blends of starch and thermoplastic polymers in the presence of water and polyols as plasticizers, can be extruded." (Id.)

The Examiner also asserted that "Wang teaches a biodegradable protein/starch based thermoplastic composition that can be extruded and consumed by animals..." (Id.) The Examiner also asserted that "[t]he amount of starch is 20-60% (col 3, lines 63-64)." (Id.)

In referring to Leo and Wang, the Examiner acknowledged that "[b]oth patents do not teach inulin."

The Examiner asserted, though, that "inulin, a polysaccharide, is known to be a stabilizer for extrudable thermoplastics. See Van Haveren et al (col 2, line 62-64 and abstract)." (Id. at 6-7.) The Examiner also asserted that "Bengs et al. teach a mixture of starches including inulin, used in biodegradable thermoplastic materials that

can be thermoplastically processable using techniques such as injection holding [sic] or extrusion. [citations omitted.] Note that the *mixture* of starches is given to be in an amount 33-90%." (Id. at 7.)

In addition, the Examiner asserted that Anantharaman "teach [that] the use of inulin in pet food products is beneficial in an amount of at least 0.25%." (Id. at 7.) The Examiner also asserted that Anantharaman discloses "that inulin promotes bifido- and lacto-bacteria in the GI tract at the expense of pathogens and is very beneficial for animals and inulin has been used as a vet diet for pets. [citations omitted.] This patent establishes that inulin has been used for pet foods and that 'for pet foods, their use has been confined to specialty veterinary products such as the Eukanuba product and to pet treats. Similarly, for human foods, their use has been confined to specialty products.' (Col. 2, lines 7-10)." (Id.)

The Examiner concluded that "while Leo and Wang establish [that] biodegradable, thermoplastically processable starch containing products have been used for pet chews, Anantharaman et al., by establishing that inulin provides benefits for the GI tract for pets, and that inulin has been used for pet treats, motivates one of ordinary skill in the art to incorporate inulin in biodegradable, thermoplastically processable products of Leo and Wang in pet products with plasticizers or glycerol, etc." (Id.) The Examiner asserted that "the patents to Bengs et al. and Van Haveren et al. show shaped, extrudable, biodegradable, inulin containing articles wherein inulin additionally acts as a stabilizer for such a thermoplastically processable compositions (Van Havernan et al.). Patents to Anantharaman et al. and Van Haveren et al. show inulin amounts of 'at least 0.25%' and mixtures of starch including inulin between 33%

to 90%, and to determine amounts for various pet chew articles would have been obvious based on such disclosure. With regard to claim 13, Leo shows a bone. With regard to claim 12, the Anantharaman et al. patent shows the extrusion temperature at col 4, line 10-15." (Id. at 7-8.)

Arguments previously presented on the record are incorporated here as though presented in full.

As noted above, to forward prosecution in the present application, claim 1 has been amended to recite "[a] chewable article for animals, such as household dogs and cats, the article being made from thermoplastically processable inulin or mixtures of inulin and oligofructans."

It is submitted that Leo does not provide any teaching, suggestion or motivation for the chewable article of amended claim 1. Initially, we note that the Examiner has acknowledged that inulin is "a polysaccharide". (Id. at 6.) Nowhere in the Action does the Examiner assert that inulin is substitutable for starch according to the disclosure of Leo. Furthermore, as presented previously on the record, the polysaccharide inulin differs completely from a starch in both structure and molecular mass. The degree of polymerization of inulin is only between 2 and 60, whereas the degree of polymerization for starch is orders of magnitude higher. One skilled in the art would not be motivated to use inulin because its molecular mass is so low that success would not be expected in converting it into a thermoplastically processable material. For these reasons alone, removal of the document from the rejection is warranted, and the rejection must fall.



Furthermore, we note that Leo discloses the use of blends of starch (thermoplastically processable starch obtained by extrusion in presence of water and/or polyols) with biodegradable polymers for making toys for pets. No disclosure is found in Leo of the use of starch without also the presence of a biodegradable polymer. Leo provides no motivation nor any expectation of success in the use of starch (thermoplastically processable or not) alone for preparing chewable toys for pets. And, there is no indication that inulin would be substitutable for starch. In fact, as noted above, because the molecular mass of inulin is so low, one skilled in the art would not expect success in converting it into a thermoplastically processable material. In view of Leo, one skilled in the art would consider that the use of starch (thermoplastically processable or not) without a thermoplastic polymer would be **unsuitable** for preparing molded objects as chewable toys for pets. Clearly, Leo provides no motivation nor any expectation of success in the use of inulin or mixtures of inulin and oligofructans, nonetheless without also the presence of a thermoplastic polymer.

Wang discloses a biodegradable protein/starch-based thermoplastic composition useful in preparing expanded foams. It is maintained that inulin would not be considered a starch by one of ordinary skill in the art. Thus, Wang does not provide motivation for the claimed chewable article made from thermoplastically processable inulin or mixtures of inulin and oligofructans. Furthermore, Wang discloses that starch is present in the mixture with a protein, as **starch products alone are "brittle with poor physical aging."** (See Col. 2, lines 25-31) (emphasis added.) In view of the disclosure of Wang, one skilled in the art would understand that a foamed material having the good mechanical properties disclosed by Wang would not be achievable

using starch without also including a protein. Accordingly, Wang provides no motivation nor any expectation of success in the use of inulin or mixtures of inulin and oligofructans, nonetheless without also the presence of a thermoplastic polymer. Moreover, in view of Wang, one skilled in the art would consider that the use of starch (thermoplastically processable or not) without a thermoplastic polymer would be **unsuitable** for preparing molded objects as chewable toys for pets.

Thus, in view of Leo or Wang, or both in combination, one skilled in the art would not have expected the favorable mechanical properties of the claimed article being made from thermoplastically processable inulin or mixtures of inulin and oligofructans. Furthermore, Leo and/or Wang teach away from the modifications suggested by the Examiner. One skilled in the art would not have considered that the chewable article of amended claim 1 would have been achievable, in view of Leo and/or Wang.

In view of all of the foregoing regarding Leo and/or Wang alone, these documents should be removed and the rejection should fall as to amended claim 1 and claims dependent thereon.

In the interest of completeness, we also note that the Examiner has cited Van Haveren and Bengs, each of which are not properly citable as references, as previously noted on the record. Withdrawal of both documents is requested upon perfecting priority.

The following remarks regarding Bengs are provided, although Bengs is not a proper reference, to point out evidence, even by way of this "later in time" document, that one skilled in the art would have considered inulin to be a

polysaccharide. A document which is not prior art but which was published later in time may be used, not as prior art, but to evidence a property of a claimed item as would have been understood by one of skill in the art. See *In re Wilson*, 135 USPQ 442, 443-444 (CCPA 1962).

Bengs discloses “shaped biodegradable articles, such as moldings or films...”, prepared from “lignin with thermoplastic materials based on biopolymers, in particular based on starch...”. (Col. 1, lines 16-17; Abstract, sixth to third lines from the bottom.) The Examiner has mischaracterized the disclosure of Bengs in asserting that “Bengs et al. teach a mixture of starches including inulin, used in biodegradable thermoplastic materials...”. (Id. at 7.) Bengs does not refer to inulin as a starch, but rather, as a **polysaccharide**. (Col. 5, lines 11-22.) Also, Bengs’s disclosure that “[t]he presence of ...inulin ...can also be advantageous” indicates that inulin is an optional additive, rather than a necessary component. Additives disclosed by Bengs are noted without indication of amount to use or the purpose of their optional inclusion. In view of the foregoing, even this later in time document which does not qualify as prior art supports that inulin would have been considered a polysaccharide rather than a starch.

Anantharaman does not in any way suggest use of inulin as a thermoplastically processable material, nonetheless achieving a chewable article made from thermoplastically processable inulin or mixtures of inulin and oligofructans, without also the presence of a thermoplastic polymer. In no way does Anantharaman alter the lack of expectation of success on the part of one skilled in the art in achieving the claimed invention, as noted above. Furthermore, it is submitted that the Examiner’s assertion that one of ordinary skill in the art would have been motivated to incorporate

inulin in thermoplastic polymers for producing chew toys because inulin is used in pet food for its beneficial effect on the digestive tract, does not apply to amended claim 1 and in any event, does not carry weight. One skilled in the art would understand that inulin present in a molded chewable article of amended claim 1 would be released in too small an amount to offer an appreciable benefit to pet digestion, as compared to its presence in pet food.

It is respectfully submitted that none of the properly cited documents, whether alone or in any combination, teach, suggest or provide motivation for amended claim 1. One skilled in the art would not expect success in the chewable article made from thermoplastically processable inulin or mixtures of inulin and oligofructans, as claimed, in view of any of these documents, alone or in combination. It is submitted that the rejection has been overcome as to amended claim 1 and claims dependent thereon. Reconsideration and withdrawal of the rejection is requested.

It is also noted that claim 16 is presented, which is directed to "[a] chewable article for animals, the article being made from a mixture of thermoplastically processable inulin and a biodegradable thermoplastic polymer."

The Examiner is referred to arguments above regarding each of Leo and Wang, as well as evidence provided by the non-prior art document, Bengs, indicating that one skilled in the art would not have considered inulin to be a starch. Nor would one skilled in the art have considered that Leo or Wang could be modified to replace starch with inulin. As noted above and previously on the record, the polysaccharide inulin differs completely from a starch. One skilled in the art would not have expected success in converting inulin into a thermoplastically processable material. Moreover,

one skilled in the art would in addition have considered that success would not be achieved in using such inulin with a **biodegradable** thermoplastic polymer. What's more, one skilled in the art would not have expected to achieve a chewable article made from a mixture of thermoplastically processable inulin and a biodegradable thermoplastic polymer, having favorable mechanical properties.

It is here noted that Van Haveren discloses the use of inulin as a heat stabilizer for polymers such as vinyl chloride polymers, e.g., PVCs, and polyolefins. (Col. 1, lines 8-10; Col. 1, line 66 – Col. 2, line 1; Col. 3, lines 21-29; and the examples of Compounds A, B and C and Tables in Cols 4-5), i.e., non-biodegradable polymers.

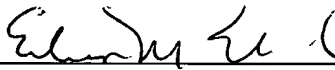
It is again noted, however, that each of Bengs and Van Haveren is not properly citable as a reference.

As noted above, Anantharaman does not in any way suggest use of inulin as a thermoplastically processable material. Furthermore, it is submitted that the Examiner's assertion that one of ordinary skill in the art would have been motivated to incorporate inulin in thermoplastic polymers for producing chew toys because inulin is used in pet food for its beneficial effect on the digestive tract, does not carry weight. One skilled in the art would understand that inulin present in a molded chewable article of claim 16 would be released in too small an amount to offer an appreciable benefit to pet digestion, as compared to its presence in pet food. And, Anantharaman offers no expectation of success in achieving the claimed chewable article which has favorable mechanical properties and which is suitable as a chewable toy for pets, by incorporating thermoplastically processable inulin into a biodegradable thermoplastic polymer.

No motivation or expectation of success can be found in any of the properly cited documents that incorporating thermoplastically processable inulin into a biodegradable thermoplastic polymer would provide an article having favorable mechanical properties and suitable as a chewable toy for pets. It is submitted that the rejection, to the extent it may have applied to claim 16, has been overcome. It is respectfully submitted that claim 16 and claims dependent thereon are allowable.

Accordingly, for the reasons set forth above, entry of the amendments, withdrawal of the rejections, and allowance of the claims are respectfully requested. If the Examiner has any questions regarding this paper, please contact the undersigned.

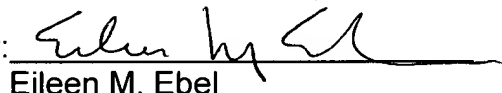
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